

Panasonic

Operating Instructions Additional Business Intelligence Kit

Model No. **WJ-NVF20**
WJ-NVF20E



Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

The model number is abbreviated in some descriptions in this manual.

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Preface

Additional Business Intelligence Kit WJ-NVF20 and WJ-NVF20E (hereinafter, this product) is a license kit intended to improve the usefulness of Network Disk Recorder WJ-NV200K and WJ-NV200K/G. After the license for this product is registered, face detection results are processed statistically, and the statistical results can be displayed on the main monitor connected to the recorder.

Features

The number of people whose faces are detected can be classified according to each gender and age for a day or a specified time period to create and display a statistical graph. The age distribution is classified by color. In addition, the statistical result can be saved as a CSV file* in an SDHC/SD memory card or on a PC connected via a network.

* CSV file: A file that can be edited using a spreadsheet software such as Microsoft® Office Excel®.

About the user manuals

This document describes how to register the license for this product into a network disk recorder, what to configure before starting the operation and how to operate the product. The product is intended to be used after its license is registered into the network disk recorder. Together with the document, be sure to read the operating instructions provided with the network disk recorder in use.

Depending on descriptions, the model name of WJ-NV200 Series (other than WJ-NV200/1L) may be omitted as "NV200K" in the manuals and on the setup. Besides, the descriptions in this manual refer to a setup where 16 cameras are connected to the NV200K.

Adobe® Reader® is required to read the PDF files on the provided CD-ROM. When Adobe® Reader® is not installed on the PC, download the latest Adobe® Reader® from the Adobe web site and install it.

System requirements for a PC

When operating this product on a PC, refer to the operating instructions of the network disk recorder in use for further information about system requirements for a PC.

Trademarks and registered trademarks

- Adobe, Acrobat Reader and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- Microsoft and Excel are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation.
- All other trademarks identified herein are the property of their respective owners.

Abbreviations

The following abbreviations are used in this manual.

SDHC/SD memory card is described as SD card or SD memory card.

Network disk recorders are described as recorder, and network cameras are described as cameras.

Before using this product

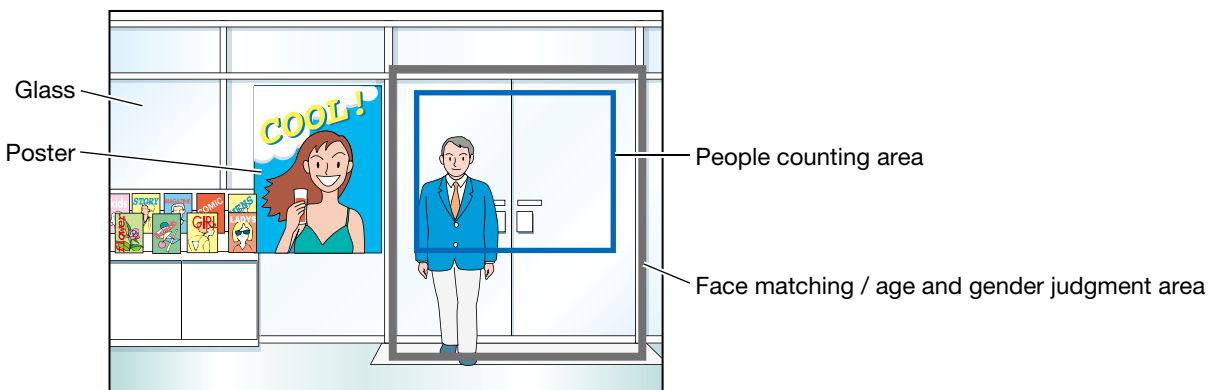
Face matching and statistical processing

- To use this product, Camera 1 is required to support the face detection function.
- Refer to the "readme.txt" on the CD-ROM provided with NV200K about the supported cameras. The maximum number of faces that can be detected simultaneously depends on the detection performance of the camera.
- When using this product, the settings for Camera 1 are automatically changed for face matching.
 - Compression: H.264
 - Image capture size: SXVGA(1280×960)
 - Frame rate: 5 ips
 - Image quality: SF
- * Retaining the original values may considerably change the recording time.
- The maximum number of people that can register for face matching is 64. In addition, the concurrent maximum number of face images that can match is 32.
- The statistical processing function is unavailable while recorded images are being played back or the setup menu is being displayed.
- Functions that can be used from a web browser on a PC are limited to displaying the statistical processing status and downloading a CSV file of the statistical processing result.
- Up to 500 data of the statistical processing result can be saved per hour. When too many people appear in images at the same time, some data cannot be accumulated.
- Maximum available period to save the statistical processing result on a hard disk drive is 1 year. After the period has passed, the oldest data is the first to be deleted.
- The performance of the statistical processing function depends on the detection performance of the camera and the statistical processing performance of the recorder. When too many people appear in images at the same time, some faces may not be statistically processed.

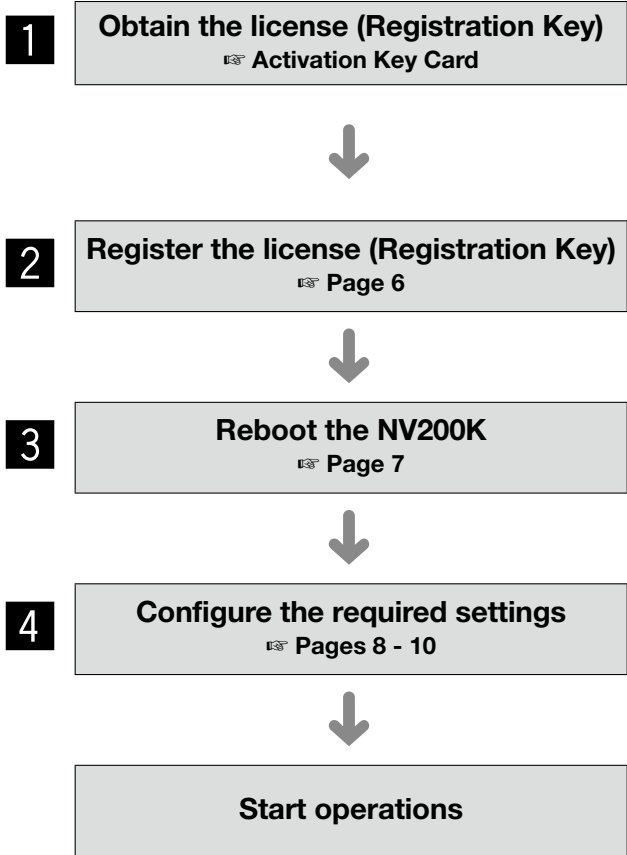
To enhance the accuracy of the statistical processing

- Refer adequately to "About the face matching function" in the NV200K Operating Instructions to install the cameras and configure the camera settings.
- Configure the settings of the people counting area and the face matching / age and gender judgment area (☞ page 9) to avoid counting the same person repeatedly and avoid targeting people's faces printed on a poster.
- Configure the setting so that the people counting area is included in the face matching / age and gender judgment area.

<Example of the area setting>



Operations flow



1 Obtain the "Registration Key" of this product by following the instructions on the Activation Key Card provided with the product.

2 Register the "Registration Key" obtained in Step **1** into the NV200K.

3 Reboot the NV200K.

4 Configure the setting of target areas to enhance the accuracy of the statistical processing.

Register the license (Registration Key)

To use the statistical processing function, it is necessary to register the license (Registration Key) for this product into the NV200K in use.

Only the administrator and users of an allowed level (NV200K Operating Instructions) can register the "Registration Key".

Important:

- Register the "Registration Key" of the NV200K before registering the "Registration Key" of this product.
- After registering the "Registration Key", be sure to click the [Restart] button to reboot the NV200K. Otherwise, the license will not become effective.
- As necessary, perform the settings of the expansion functions since these settings are currently default.

Register the license

Step 1

Enter the "Registration Key" by following the instructions on the Activation Key Card provided with Additional Business Intelligence Kit WJ-NVF20 / WJ-NVF20E. Refer to the Activation Key Card for further information.

Step 2

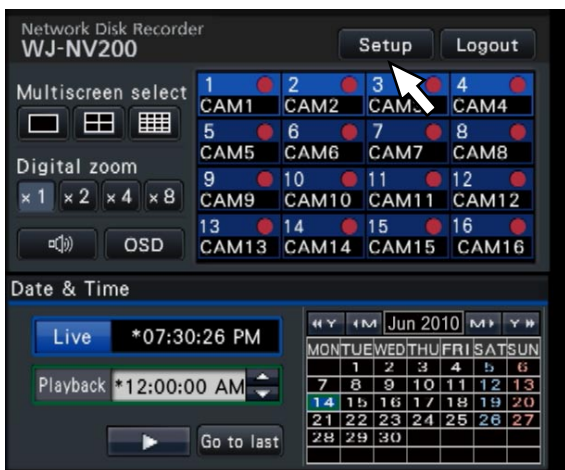
Prepare the extension software. (→ Addendum "About the face matching function")

Step 3

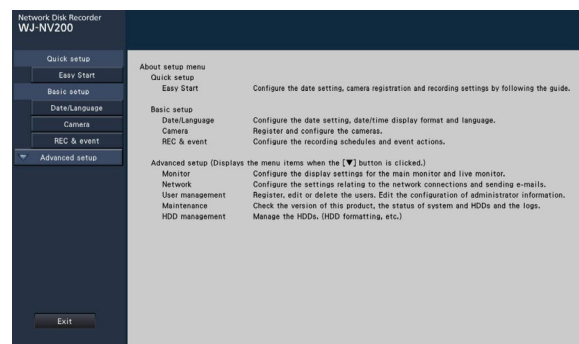
Start the NV200K in use. (→ NV200K Operating Instructions)

Step 4

Click the [Setup] button.



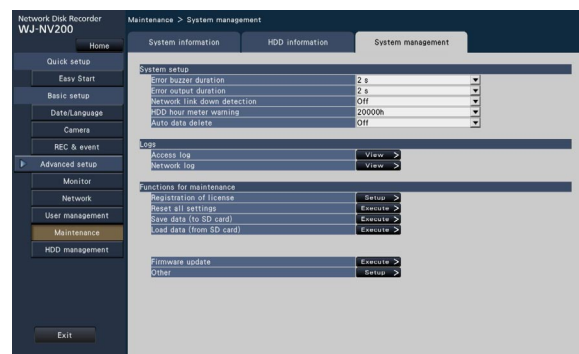
→ The setup menu will be displayed.



Step 5

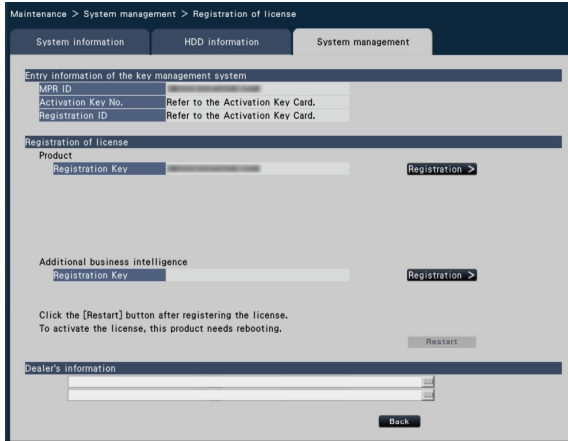
Click [Advanced setup] → [Maintenance] → the [System management] tab on the setup menu.

→ The "System management" page will be displayed.



Step 6

Click the [Setup >] button of [Registration of license].
→ The registration window to register the license will be displayed.



Step 7

Click the [Registration >] button of "Additional business intelligence" - "Registration Key".

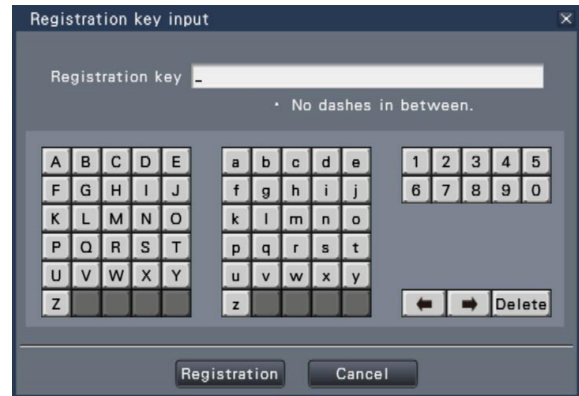
- The following confirmation window will be displayed.
- "Would you like to save setup data?"
→ Click the [Yes] button to proceed to the next step.
 - "Please execute after formatting HDD."
→ Click the [Close] button to format the hard disk drive. If you need the saved data, make backup copies before formatting. (NV200K Operating Instructions) After formatting is completed, perform operations from Step 2.
 - The firmware on the SD card is incorrect.
→ Click the [Close] button to check that the extension software has been saved in the specified directory on the SD memory card.

Step 8

Click the [Next] button.
→ The window for entering the "Registration Key" will be displayed.

Step 9

Enter the "Registration Key" for this product using the on-screen keyboard, and click the [Registration] button.



→ The registration window to register the license will be displayed again.

Note:

- When an error message is displayed, enter the effective "Registration Key" again on the entry field.

Step 10

Click the [Restart] button on the registration window to register the license.

→ The NV200K will reboot, the license will become effective, and the [Extra function] button will be displayed on the setup menu. Proceed to "Configure the settings" (page 8).

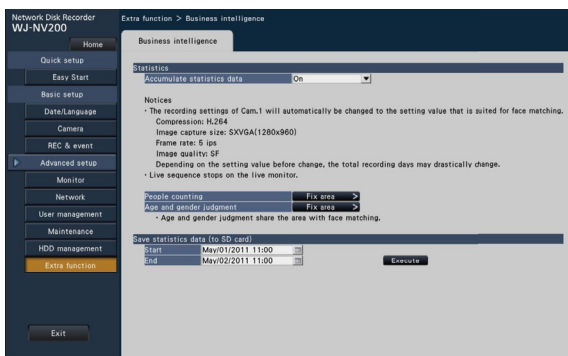
Configure the settings and save the data [Extra function]

The settings on the NV200K relating to the functions of this product can be configured on [Advanced setup] → [Extra function] → the [Business intelligence] tab on the setup menu. Configure the area settings to enhance the accuracy of the statistical processing and save the statistical processing data on an SDHC/SD memory card. Only the administrator and users of an allowed level can configure the settings. (NV200K Operating Instructions)

Important:

- The [Extra function] button will be displayed under [Advanced setup] after registering the license for the product.

Configure the settings



[Accumulate statistics data]

Select whether or not to execute the statistical processing (data accumulation) of the face detection results. The statistical processing will not be executed in the period that is set to "Off", and the statistics data will not be accumulated or displayed on the graph.

Off: Does not execute the statistical processing.

On: executes the statistical processing.

Default: On

Set up target areas [People counting], [Face matching / Age and gender judgment]

Configure the setting of target areas to enhance the accuracy of the statistical processing.

While displaying live images, up to 4 people counting areas and up to 4 face matching / age and gender judgment area can be set up. At the default, the whole camera image is targeted for the statistical processing. It is possible to enhance the accuracy of the statistical processing by setting up the areas.

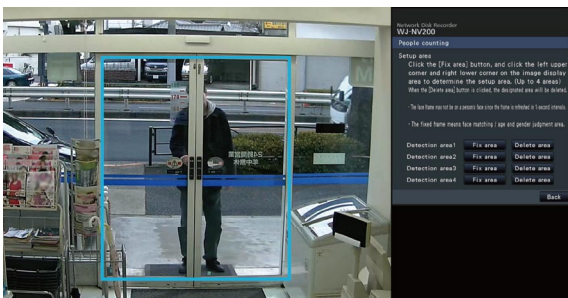
[People counting]

Set up areas to count people. The number of people will be targeted for counting when a person appears in the area. The number will be counted when the person moves outside of the image. The number will not be counted when a person only moves into the area from outside of the area. Limit the people counting area on the entrance or a reception area in a store to avoid counting the same person repeatedly.

Step 1

Click the [Fix area >] button of "People counting" on the business intelligence setup page (☞ page 8).

→ The window for setting up the people counting area will be displayed.



The following are displayed on the image display area.

Green frame: Face detection (The frame will be updated every second.)

Aqua frame: Face matching / age and gender judgment area (☞ page 10).

Step 2

Click the [Fix area] button next to the respective people counting area. A maximum of 4 areas can be registered to allow for polygonal shapes.

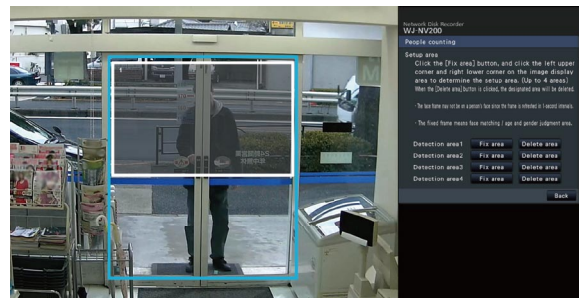
Note:

- It is recommended to select such places as the entrance or the reception area in a store where the same person does not appear repeatedly in the area.
- Configure the setting so that the people counting area is included in the face matching / age and gender judgment area.

Step 3

On the displayed image, click the upper left and lower right corner of the square that will become the designated area.

→ The designated area will turn gray and will be registered as a people counting area. If even part of the green frame is overlapped with the people counting area, the portion within a green frame will be set to count the number of people.



Step 4

To complete the settings, click the [Back] button.

→ The screen returns to the business intelligence setup page.

Note:

- As each area will be set up to match the image display area divided into 16x16 segments, the top left and bottom right detection areas may not be exactly as designated.
- To delete a registered area, click the [Delete area] button for the area to delete.

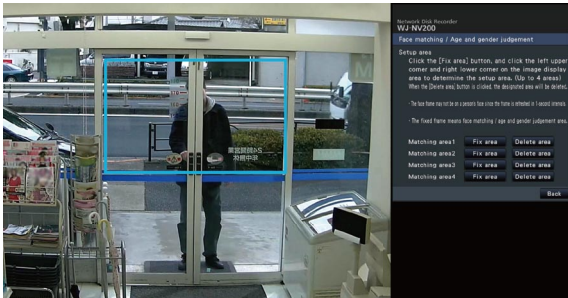
[Age and gender judgment]

Register the areas to perform face matching / age and gender judgment. The result of the face detection that is performed in this area will be targeted for the face matching and the statistical processing according to ages and genders. The settings are the same as the area settings for face matching that is performed on [Face registration] of the [Event setup] tab of the "Basic setup" page - the [REC & event] tab. (☞ NV200K Operating Instructions)

Step 1

Click the [Fix area >] button of "Face matching / age and gender judgment" on the business intelligence setup page (☞ page 8).

→ The window for setting up the face matching / age and gender judgment area will be displayed.



The following are displayed on the image display area.

Green frame: Face detection (The frame will be updated every second.)

Aqua frame: People counting area (☞ page 9)

Step 2

Click the [Fix area] button next to the respective face matching / age and gender judgment area. A maximum of 4 areas can be registered to allow for polygonal shapes.

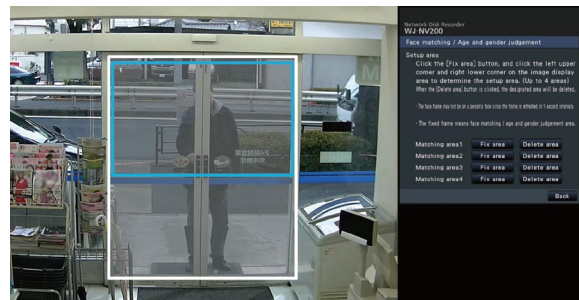
Note:

- Configure the setting so that the people counting area is included in the face matching / age and gender judgment area.

Step 3

On the displayed image, click the upper left and lower right corner of the square that will become the designated area.

→ The designated area will turn gray and will be registered as a face matching / age and gender judgment area. If even part of the green frame is overlapped with the face matching / age and gender judgment area, the portion within a green frame will be targeted for the statistical processing.



Step 4

To complete the settings, click the [Back] button.

→ The screen returns to the business intelligence setup page.

Note:

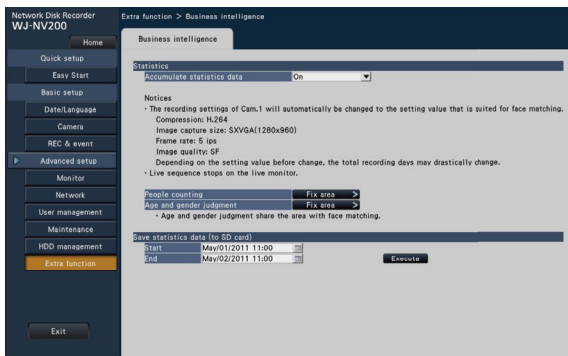
- As each area will be set up to match the image display area divided into 16x16 segments, the top left and bottom right detection areas may not be exactly as designated.
- To delete a registered area, click the [Delete area] button for the area to delete.

Save the statistics data on the SD memory card

The statistical processing result can be saved on the SD memory card in the format of a CSV file. It is possible to designate the period to save the data by date & time. Refer to page 16 for further information about the statistics data.

Note:


- Insert an SD memory card into the main unit of NV200K in advance.
 - When using an unformatted SD memory card or an SD memory card formatted with other devices, format the card on the NV200K.
 - Refer to the NV200K Operating Instructions for further information about how to handle the SD memory card.
 - Maximum available period to save the statistical processing result on an SD memory card is 1 year. After the period has passed, the oldest data is the first to be deleted. It is recommended to make back-up copies regularly on an SD memory card.
-



[Save statistics data (to SD card)]

Set the start time and the end time of the period to save statistics data on the SD memory card.

Step 1

Click the  icon of "Start" and "End". A calendar will be displayed. Refer to the NV200K Operating Instructions for further information about how to set the date using the calendar.

Step 2

Click the [Execute] button.
→ The following confirmation window will be displayed to save the statistics data on the SD memory card.


Use the statistical processing function


If the license for this product is registered, the following buttons will become available on the status display panel of the control screen and that of the wide view screen. Refer to the NV200K Operating Instructions for further information about the control screen or the status display panel.



① Statistical status button

Indicates the status of statistical processing. This button turns gray while the statistical processing is being stopped. It is possible to display/hide the statistical result button by clicking this button.

: The statistical processing is being performed.

: The statistical processing is being stopped.

② Statistical result button [Statistics]

Indicates the statistical result on the operation panel of the control screen.

When this button is clicked, wide view screen will be changed to the control screen.

Display the statistical result

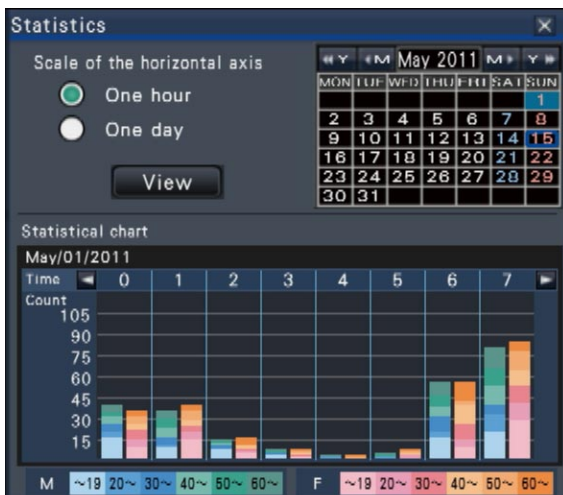
Step 1

Press the [Statistics] button on the status display panel.

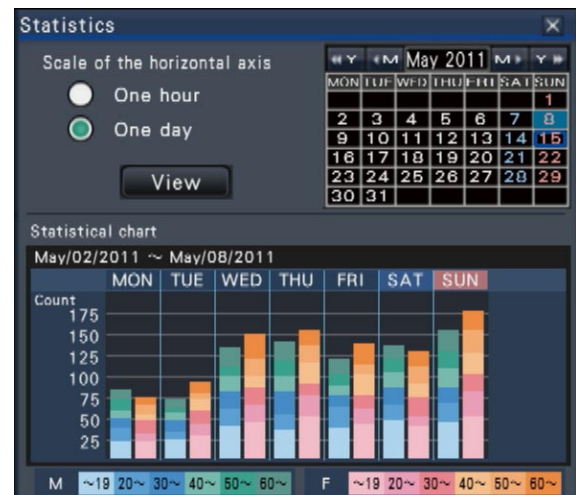


→ The statistical result panel will be displayed on the operation panel. (The wide view screen will be changed to the control screen.)

<Scale of the horizontal axis: One hour>



<Scale of the horizontal axis: One day>



Step 2

Select the date to display the statistical result. Select the year, month and day from the calendar.
(☞ NV200K Operating Instructions)

Step 3

Select the scale of the horizontal axis.
When "One hour" is selected, the statistical result per hour in the day (for 24 hours) selected in Step 2 is targeted for display. When "One day" is selected, the statistical result per day in the week from Monday to Sunday including the day selected in Step 2 is targeted for display. ("One hour" has been selected for the "Scale of the horizontal axis" when the statistical result panel is displayed.)

Step 4

Click the [View] button.
→ The statistical graph will be displayed in accordance with the setting. Each time the [View] button is clicked, the statistical result will be refreshed to the newest status.

Note:

- The graph will not be displayed when designating the period in which the statistical processing has not been performed. Besides, it is impossible to display the statistics data of more than a year ago.
- When "One hour" is selected for "Scale of the horizontal axis", it is possible to display the next or previous hour by clicking the [<] or [>] button of the statistical graph. (It is impossible to go to the next or previous day.)
- When "One day" is selected for "Scale of the horizontal axis", it is impossible to click the [<] or [>] button.

Step 5

Click the [x] button to close the statistical result panel.

<How to view the statistical graph Example:
When "One hour" is selected for "Scale of the horizontal axis">



Horizontal axis: When "One hour" is selected for "Scale of the horizontal axis", the statistical graph will be displayed on an hourly basis (up to 24 hours), when "One day" is selected, the statistical graph will be displayed on a weekly basis divided into each day of the week.

Vertical axis: The total number of people accumulated through the face matching function is displayed according to each gender and age. The graph bars are classified into the following colors by age. Therefore, it is possible to grasp at first sight the distribution of people by number and age for a specified time period or a specified day of the week.

19 years old or less/ 20 to 29 years old/
30 to 39 years old/ 40 to 49 years old/
50 to 59 years old/ 60 years old or more

The scale of the vertical axis will be displayed in accordance with the maximum value of the number of people to be displayed on the graph.

Note:

- The same person may sometimes be counted more than one time since people counting is performed each time a face is detected. The number of people should be referred to only as an indication.
- People whose gender cannot be judged will not be displayed on the graph. However, they will be saved as statistics data. (☞ Page 16)
- To save the statistics data on the SD memory card, click the [Setup] button, and perform the operation on [Advanced setup] → [Extra function] (☞ page 8). (To display the setup menu, the administrator and users of an allowed level should log into the NV200K.)

Operate this product form the web browser

From the web browser on a PC connected to the NV200K, it is possible to check the status of statistical processing or download the statistics data.

Refer to the NV200K Operating Instructions for further information about the required network settings, the security functions, and the login procedure.

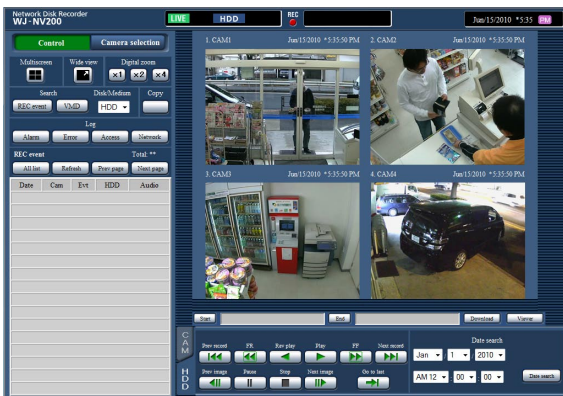
Check the status of statistical processing

It is possible to check whether the statistical processing is being performed or stopped in the status display area on the top page.

Step 1

Start the web browser on the PC to log into the NV200K. (☞ NV200K Operating Instructions)

→ The top page will be displayed.



Step 2

While the statistical processing is being performed, the display in the status display area will be as follows.



STAT : Indicates that the statistical processing is being performed.

Save the statistics data on the PC

From the web browser, it is possible to save the statistics data on the PC.

Step 1

Click the [Setup] button on the top page (☰ page 14) of the web browser on the PC.

→ The setup menu will be displayed.

Step 2

Click the [Extra function] button.

The [Extra function] button will be displayed after registering the license for Additional Business Intelligence Kit.

→ The business intelligence setup page will be displayed.



Step 3

Set the year, month, date and time of the start point and end point for "Download statistics data".

Step 4

Click the [Download] button.

→ The "Save As" window will be displayed. Save the file in any directory on the PC.

The statistics data will be saved as a CSV file.

Refer to page 16 for further information about the statistics data.

About the statistics data

The statistics data will be saved in the following format and with the following content as a CSV file.

File name:

(Ex: If the date & time is designated between April 20, 2011 7:00:00 and April 27, 2011 20:00:00 when the data is saved)

01_110420070000_110427200000_rr_nn.csv

- The camera number will be given automatically to the first 2 digits of the file name.
- Only the last 2 digits of the year will be given to the file name.
- rr: When the same data is saved more than one time, sequential numbers will be given automatically to these files.
- nn: When the number of lines in a file exceeds 65536, the file will be divided in two or more and sequential numbers will be given automatically to these files.

When the statistics data is downloaded from the web browser, it is impossible to divide the file in two or more automatically. In such a case, "00" will be given instead of "rr".

Destination to save: Operation on the NV200K SD card [Drive]:\PRIVATE\MEIGROUP\PSS\NVR
Web browser Any folder on the PC

<Example of display: When the statistics data is opened with Microsoft® Office Excel®>

```
#localtime, gmtime, timezone, summertime, gender, age,  
#gender, 0:male, 1:female, 255:unknown  
2011/04/20 15:24:36 01, 2011/04/20 10:24:36 01, GMT-5:00, 0, 0, 7  
2011/04/20 15:24:36 17, 2011/04/20 10:24:36 17, GMT-5:00, 0, 0, 42  
2011/04/20 15:24:36 17, 2011/04/20 10:24:36 17, GMT-5:00, 0, 1, 17  
2011/04/20 15:24:36 26, 2011/04/20 10:24:36 26, GMT-5:00, 0, 0, 6  
2011/04/20 15:24:36 32, 2011/04/20 10:24:36 32, GMT-5:00, 0, 0, 60  
2011/04/20 15:24:36 34, 2011/04/20 10:24:36 34, GMT-5:00, 0, 1, 28  
      :                :                :                :                :
```

Item names of data will be displayed on the 1st line, the description of "gender" will be displayed on the 2nd line, and the data of each person whose face has been matched will be displayed on the 3rd or subsequent lines.

[localtime]

Displays the time when a person appeared in the form of "year, month, day" + "hour, minute, second" + "two decimal places of second".

[gmtime]

This is an item for data management. Displays the Greenwich mean time.

[timezone]

Displays the setting value of the time zone that is set for the NV200K.

[summertime]

Displays whether the current date & time is in the summertime if "Daylight saving time" is activated for the NV200K.

- 0: Out of the summertime
- 1: In the summertime

[gender]

Displays the gender judgment result of a person.

- 0: Male
- 1: Female
- 255: Judgment is impossible.

[age]

Displays the age judgment result.

Note:

- If the statistics data is downloaded from the web browser when there is a file whose number of lines exceeds 65536, designate the start point and end point of the data to download so that the file can be divided and saved in two or more. (Page 15)
-

Troubleshooting

Before asking for repairs, check the symptoms with the following table.

Contact your dealer if a problem cannot be solved even after checking and trying the solution in the table or a problem is not described below.

Symptom	Cause/solution	Reference pages
When trying the license ("Registration Key"), the following message is displayed. "Please execute after formatting HDD."	<ul style="list-style-type: none"> It is necessary to format a hard disk drive when using the product with the NV200K whose software has been updated. Refer to the NV200K Operating Instructions for further information about how to make back-up copies and how to format the hard disk drive. 	NV200K Operating Instructions
The following message is displayed on the statistics result panel. "Buy Additional Business Intelligence Kit to display the statistical graph."	<ul style="list-style-type: none"> The license (Registration Key) of Additional Business Intelligence Kit has not been registered. Register the license. 	–
"Count" (the number of people) to be displayed on the graph becomes 0.	<ul style="list-style-type: none"> Is "Off" selected for the setting for statistical processing? To perform the statistical processing, select "On". 	8
	<ul style="list-style-type: none"> The settings of the people counting area and that of the face matching / age and gender judgment area may be improperly configured. Configure the setting so that the people counting area is included in the face matching / age and gender judgment area. 	9, 10

For U.S. and Canada:

**Panasonic System Communications Company of North America,
Unit of Panasonic Corporation of North America**

www.panasonic.com/business/
For customer support, call 1.800.528.6747
Three Panasonic Way, Secaucus, New Jersey 07094 U.S.A.

Panasonic Canada Inc.

5770 Ambler Drive, Mississauga, Ontario, L4W 2T3 Canada
(905)624-5010
www.panasonic.ca

For Europe and other countries:

Panasonic Corporation

<http://panasonic.net>

Importer's name and address to follow EU rules:

Panasonic Testing Centre
Panasonic Marketing Europe GmbH
Winsbergring 15, 22525 Hamburg, Germany